We claim:

1. A method of coating metal components by applying a first coating composition to the target surface of the component as to provide a basecoat and then applying at least one further coating composition to the surface provided with the basecoat, which comprises selecting the first coating composition from aqueous compositions, which comprise:

   i) at least one aqueous polymer dispersion whose addition polymer P has a glass transition temperature below 0°C and contains in copolymerized form

      - from 80 to 99.5% by weight of at least one monoethylenically unsaturated, hydrophobic monomer A,
      - from 0.5 to 10% by weight of at least one monoethylenically unsaturated monomer B selected from monocarboxylic acids, dicarboxylic acid and their anhydrides, and if desired
      - from 0 to 10% by weight of one or more ethylenically unsaturated monomers C, different than the monomers A and B, the weight fractions of the monomers A, B and C adding up to 100% by weight,

   ii) at least one water-soluble salt or complex salt of an at least divalent metal cation.

2. The method as claimed in claim 1, wherein said at least divalent cation is selected from Zn^{2+} and Ca^{2+}.

3. The method as claimed in claim 1, wherein the molar ratio of carboxyl groups of the monomers B to equivalents of the metal cation in the composition is in the range from 10:1 to 1:10.

4. The method as claimed in claim 1, wherein the monomer A is selected from the C_1-C_{10} alkyl esters of acrylic acid, the C_1-C_{10} alkyl esters of methacrylic acid, and vinylaromatic compounds.

5. The method as claimed in claim 1, wherein the monomer B is selected from acrylic acid and methacrylic acid.

6. The method as claimed in claim 1, wherein the first coating composition, based on its overall weight, contains from 10 to 50% by weight of at least one addition polymer P.

7. The method as claimed in claim 1, wherein the first coating composition per 100 parts by weight of addition polymer P contains from 5 to 300 parts by weight of at least one inorganic filler, at least one pigment, or a mixture of at least one inorganic filler and at least one pigment as component iii).

8. The method as claimed in claim 1, wherein the metal component is a shaped part made of sheet metal.

9. The method as claimed in claim 1, wherein the further coating composition is applied to the surface provided with the basecoat before the basecoat has dried.

10. A method as claimed in claim 9, wherein before the basecoat is dried a particulate material having an average particle size of more than 0.1 mm is applied to the wet basecoat.

11. The method as claimed in claim 1, wherein said at least one further coating composition comprises as binder at least one aqueous dispersion of an addition polymer P'.

12. The method as claimed in claim 12, wherein the addition polymer P' has a glass transition temperature in the range from 10°C to 80°C.

13. The method as claimed in any of claim 1, wherein the first aqueous composition is applied in an amount of from 50 to 500 g/m^2, calculated as nonvolatile constituents of the composition.

14. The method as claimed in claim 1, wherin the first aqueous composition comprises:

i) from 20 to 90% by weight of addition polymer P,

ii) from 0.1 to 5% by weight of metal ions

iii) from 2 to 25% by weight of at least one pigment and/or from 10 to 60% by weight of at least one filler, the total amount of pigment + filler not exceeding an overall amount of 75% by weight, and

iv) from 0.1 to 20% by weight, of customary auxiliaries.

15. A coated metal component obtained by a method as claimed in claim 1.